ABSTRACT AND BIOGRAPHY

Systems Engineering and Requirements Tensions

The tension between system requirements definition, systems engineering capabilities and human systems limitations is a constant theme in engineering history from the Romans to modern day mega-projects. In this interactive session, NASA's Chief Engineer, Mike Ryschkewitsch will illustrate the effect of ignoring that tension with a chilling story where engineering knowledge limits collide with changing requirements and organizational challenges. The discussion will focus on how NASA is working to avoid the fate of the VASA, a magnificent Swedish sailing vessel that never made it out of the harbor.

Michael Ryschkewitsch, Ph.D.
NASA Chief Engineer
NASA Headquarters

Dr. Michael Ryschkewitsch was recently named NASA Chief Engineer. He goes to NASA HQ from Goddard Space Flight Center, where he was most recently Deputy Center Director. Dr. Ryschkewitsch joined the GSFC in 1982 as a cryogenics engineer supporting the development of the superfluid helium dewar for the Cosmic Background Explorer. During the COBE program he served at various times as the dewar lead engineer and contract COTR and instrument mechanisms tiger team leader. During this period, he also led a tiger team to repair the Broad Band X-Ray Telescope cryocoolers.

He served as a Head of the Cryogenic Systems Development Section and Assistant Branch Head for the Electromechanical Systems Branch. He was selected as Associate Chief of the Space Technology Division in 1990. During this time he lead the GSFC team that worked with Ball Aerospace to develop the concept for the Corrective Optics Space Telescope Axial Replacement (COSTAR) that was used in the repair of the HST during the first servicing mission. In 1992, he was selected to form and become Chief of the Engineering Directorate Systems Engineering Office. He was selected to become the Deputy Director of the Systems, Technology and Advanced Concepts Directorate (STAAC) in the fall of 1997 and the Deputy Director of the Applied Engineering and Technology Directorate in October 2001.

Dr. Ryschkewitsch has received numerous group achievement awards during his career. He was awarded the NASA Exceptional Service Medal in 1990 and the NASA Medal for Outstanding Leadership in 1998. Dr. Ryschkewitsch received a B.S. in Physics from the University of Florida in 1973 and a Ph.D. in Physics from Duke University in 1978. Prior to joining the GSFC he served as a postdoctoral fellow and visiting Assistant Professor of Physics at the University of Delaware.

NASA Project Management Challenge 2009

PROJECT MANAGEMENT CHALLENGE 2009

Sixth Annual NASA Project Management Seminar

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Dr. Edward Rogers
Chief Knowledge Officer
NASA Goddard Space Flight Center

Dr. Edward Rogers is currently the Chief Knowledge Officer at Goddard Space Flight Center. He has run the Knowledge Management Office at GSFC since 2003, where he set the course for Goddard's learning initiatives through the "Goddard Plan for a Learning Organization."

Some of the knowledge sharing activities he initiated include the popular Road to Mission Success Course, the Pause and Learn process, and case studies. Part of Dr. Rogers' responsibility is to support Goddard projects through enhancing individual and team learning to improve mission success.

Dr. Rogers received a Ph.D. from Cornell University's School of Industrial and Labor Relations focusing on the role of cooperation in high tech firms. In the early 1980s he performed five years of international relief work in Southern Lebanon. Prior to returning to academic work at Cornell, Dr. Rogers operated a private consulting business focused on knowledge workers and intelligent enterprise. His research work applies game theory models to human behavior in organizations. He has consulted with a number of organizations on building conceptual transparency and leveraging collective knowledge.

Before joining NASA he taught strategic management and entrepreneurship in the College of Administrative Science at the University of Alabama in Huntsville where he was known for his practical application of business knowledge.